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(54) **HIGH TEMPERATURE SUPERCONDUCTIVE MATERIAL**

(57) Abstract:

**PURPOSE:** To have a sufficient film thickness and to improve manufacture effectiveness with each merit of a sputtering method and a molecular beam epitaxy method made the most by composing the captioned material with a first superconductive layer belonging to a specific system and is formed by the sputtering method, and a second superconductive layer belonging to a specific system and is formed by the molecular beam epitaxy method on the first layer.

**CONSTITUTION:** A high temperature superconductive material 2 belonging to an oxide system and having two-layer structure is formed on the substrate 1 surface. A first superconductive layer 2a is formed by using a sputtering method in the first process, and a second superconductive layer 2b is formed using a molecular beam epitaxy device in the second process. An A-B-C-D system is used as an oxide superconductor (provided A expresses one or more kinds of periodic table IIIa group elements such as Y, Sc, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Td, Dy, Ho, Er, Tm, Yb, and Lu, B shows one or more kinds of periodic table IIa group elements such as Sr, Ba, Ca, Be, Mg, and Ra, and D gives O or two

or more kinds including O of periodic table VIb group elements such as O, Se, Te, and Po and periodic table VIIb group elements such as F, Cl, Br, I, and At).

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